

## ABSTRACT

A method to quantify the radial endoluminal irregularity of aortoiliac arteries is provided.

Radial endoluminal outlines of a vessel of interest are determined. The cross sectional area is determined for the area outlined by each endoluminal outline. Using this cross sectional area

5 a shape is selected that has substantially the same area as the endoluminal outline.

Subsequently, the shape is fitted to the endoluminal outline. In one aspect, the irregularity index is calculated as the ratio of the endoluminal outline and the outline of the fitted shape.

In another aspect, the irregularity index is calculated as the ratio of at least a part of the endoluminal outline and the outline of the fitted shape that corresponds to the same part of the

10 endoluminal outline. The irregularity index is visualized using a color scheme, a range of numbers, or a set of labels.